P S A R E P O R T

PRELIMINARY SITE ASSESSMENT
PARCEL #003
KINDLEY PROPERTIES LLC PROPERTY
1094 CONCORD PARKWAY N (HWY 29 N)
CONCORD, CABARRUS COUNTY, NC
STATE PROJECT B-5136
WBS ELEMENT 42295.1.1

Prepared for

North Carolina Department of Transportation
Geotechnical Engineering Unit
Geoenvironmental Section
Century Center Complex, Building B
1020 Birch Ridge Drive
Raleigh, NC 27610
Tel. (919) 250-4088

March 14, 2013, revised May 21, 2013

URS Corporation – North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
Tel. (919) 461-1100
Fax. (919) 461-1415

URS Job No. 3182 7879

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Certification

This Report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my thorough inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Walter Plekan, L.G.	2061	5-21-13
Project Manager	NC License No.	Date
URS Corporation – North Carolina		

1.1 INTRODUCTION

This report documents a Preliminary Site Assessment (PSA) conducted by URS Corporation – North Carolina (URS) on behalf of the North Carolina Department of Transportation (NCDOT). The assessment area includes a site located along the proposed right-of-way at Bridge 66 and 69 over Southern Railroad on US 29. This PSA was conducted in Concord, Cabarrus County, North Carolina (**Figure 1**) for the MAC Victor Electronics facility, owned by Kindley Prop LLC, located at 1094 Concord Parkway North (the Site). The PSA was performed only within the proposed right-of-way and/or easement for this parcel.

This PSA was performed in general accordance with:

- NCDOT's 30 November 2012 Request for Technical and Cost Proposal (RFP) for the Site property. The RFP established the following scope of work (SOW) for the project:
  - Locate USTs and estimate approximate size and contents (if any).
  - Evaluate whether contaminated soils are present with emphasis along planned drainage lines and ditches.
  - If contamination is evident, estimate the quantity of impacted soils and indicate the approximate area of soil contamination on a site map.
  - Prepare a report including field activities, findings, and recommendations for each site and submit to this office in triplicate and one electronic copy.
- URS's 21 December 2012 Technical and Cost Proposal for the Site property.
- NCDOT's 8 January 2013 Notice to Proceed for the Site property.

The scope of work included a geophysical survey, soil sampling using a direct push technology (DPT) rig, and laboratory analyses (Total Petroleum Hydrocarbons or TPH) of selected soil samples from within the Site property. The geophysical survey was first conducted by URS in order to identify potential UST and/or anomaly locations within the Site property. Based on the results of the geophysical survey and anecdotal evidence, boring locations were identified and the DPT borings were completed by a drilling subcontractor (Probe Technology of Concord, North Carolina) under the supervision of a URS geologist. Soil borings were located in areas that were cleared of underground utilities by NC One-Call. Analysis of soil samples were performed by Pace Analytical Services, Inc. under direct contract with NCDOT.

1.2 BACKGROUND

The objective for this PSA is to assess the Site for USTs, impacted soil, and to delineate potential impacts found in soils. The major Site features and the surrounding area are shown on **Figures 1** and **2**. The parcel is bounded by Concord Parkway North and buffer to the north, Florence Street Northwest beyond which is a gas station to the west, and commercial property to the south and east. The property currently serves as a multi-unit commercial property.

A review of historical aerials (Appendix A) obtained from the Cabarrus County GIS indicates that the first structure was erected between 1956 and 1964. The building was added onto between

1964 and 1975. An additional building was constructed on the southern portion of the property between 1975 and 1986 and the property remains relatively unchanged through present day.

According to NCDENR UST Section records, in 1987 one UST was removed from the Site and a second UST was permanently closed in-place using sand. A file review of NCDENR's records did not identify any Facility ID or groundwater incident numbers associated with the property. URS did not observe any evidence of tank beds during onsite investigation activities.

2.1 GEOPHYSICAL SURVEY

The primary objective of the geophysical survey was to locate potential USTs or anomalies within the property, and a secondary objective was to identify general locations of underground utilities at the property in advance of the planned subsurface investigation. The geophysical survey for the property was conducted by URS between January 22 and 24, 2013. Ground surface conditions consisted primarily of grassy areas with minor concrete or asphalt.

The geophysical investigation was conducted using the electromagnetic (EM) method augmented by ground-penetrating radar (GPR). The EM survey was completed using the hand-held Schonstedt GA-52Cx Magnetic Locator and the Geonics, Ltd. EM-61 MKII (EM-61). The GPR survey was completed using a Sensors & Software, Inc. Noggin PLUS Smart Cart System with a 250 MHz scanning antenna.

EM-61 data were collected along parallel profiles with a nominal spacing of 5 feet where accessible. EM-61 data were recorded at a rate of 8 readings per second, which equates to an along-profile data point spacing of less than 1 foot. URS utilized the Schonstedt GA-52Cx to conduct a search of the portions of the survey area not accessible due to the size of the EM-61 instrument in order to identify anomalies indicative of USTs (i.e. between trees, man-made obstructions, etc.).

A Trimble ProXRT global positioning system (GPS) was used to record positional data coincident with the EM-61 data. The ProXRT system provided real-time differential corrections via an Omnistar subscription service. The horizontal accuracy of the differential GPS (DGPS) data is generally 3 feet or better. URS also used the GPS system to record the locations of relevant site features within the survey area.

Prior to conducting the GPR investigation, URS performed in-field analysis of the EM-61 data to identify anomalies indicative of potential USTs. Preliminary interpretations were based on an evaluation of the magnitude of the EM response as well as the dimensions of the anomaly in plan view.

The GPR was used to conduct a broad search of the parcel in areas where metal detection methods proved unreliable due to metallic interference, or where further investigation of EM anomalies were determined necessary. GPR surveying consisted of in-field analysis of real-time data. As a result, no post-processing of the GPR data was completed. However, GPR anomalies that appeared to be indicative of USTs were saved to a data file. The objective of augmenting the EM-61 survey with follow-up GPR surveying was to further characterize EM-61 anomalies that could not be readily attributed to existing site features.

The EM-61 data were pre-processed using the program DAT61 MK2 (Geonics Ltd). The program was used to prepare the data for contouring in Surfer (Golden Software, Inc.). Contoured data represent EM-61 Channel 1 and differential responses. The Channel 1 response represents data recorded at the earliest time interval along the EM-61 response decay curve. These data are applicable to detection of subsurface objects including USTs and other underground obstructions (e.g. utility lines).

2.2 SOIL BORING INSTALLATION AND MEDIA SAMPLING

Three direct-push soil borings, P3-SB1 through P3-SB3, were installed on February 4, 2013 to assess the Site for impacted soil as shown on **Figure 2**. Soil samples were collected and logged continuously at each soil boring location. Soil sample aliquots were field screened for organic vapors with a MiniRae® brand photo-ionization detection (PID) instrument calibrated daily with 100 parts per million (ppm) isobutylene.

Soil samples from select intervals were collected from each boring during the soil investigations for laboratory analysis. The samples were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO) using USEPA Method 8015B.

2.3 QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES

While in the field, pertinent observations were recorded in a logbook maintained by the URS field representative. This included pertinent field data collection activities and other observations as appropriate. Each sample collected for laboratory analysis was assigned a unique sample identification number and placed in laboratory supplied containers appropriate for the parameters being analyzed. Samples collected for laboratory analyses were stored on ice in insulated coolers immediately following collection. Information on the custody, transfer, handling, and shipping of all samples was recorded on a chain-of-custody form that accompanied the samples to the laboratory.

Soil analytical data were evaluated based on the *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (USEPA, October 1999). Sample results have been qualified based on the results of the data review process and are considered representative and valid for the purpose of this report.

3.1 GEOPHYSICAL SURVEY RESULTS

The results of the geophysical survey are presented in accordance with the NCDOT guidelines, dated May 19, 2009, for identifying and ranking potential USTs on NCDOT projects.

The EM-61 Channel 1 and differential response results are provided as plan view, color-enhanced contour maps in **Figures 3** and **4**, respectively. The results presented in **Figures 3** and **4** are superimposed on the parcel base drawing provided by NCDOT. The interpreted background response is represented by the light blue to light green contours and corresponds to the range of 0 to 100 milliVolts (mV).

The Channel 1 results in **Figure 3** indicate high response anomalies, red in color, where known utilities exist. A large metal sign is evident in the center of the contour map where a large, red anomaly is evident. In addition, two hydrants are located on the western portion of the site, and a concrete drain culvert in the northeast portion of the site.

The effects of surface and near-surface conditions appear to be muted in the differential response data, thus facilitating the identification of deeper anomalies characteristic of USTs. Because the differential response data in **Figure 4** depict more well-defined footprints of EM signatures and enable muting of surface effects, these response data were utilized to select the target locations for inclusion in the follow-up GPR survey. In this particular instance, no anomalies indicative of a potential UST was identified in **Figure 4.**

The results of the sweep search with the Schonstedt in areas inaccessible by the EM-61 and GPR did not identify anomalies indicative of buried metallic obstructions.

Due to the small area for this particular parcel, a follow-up GPR survey across the survey area was conducted. The instrument did not indicate reflections consistent with the characteristics of USTs.

3.2 SOIL SAMPLING RESULTS

A total of three soil borings were advanced to depths between 7 and 10 ft bgs during the PSA investigation at the Site property. Boring locations are shown in **Figure 2** and analytical results (TPH) are summarized in **Table 1**. The soil was described as reddish-brown sandy clay. The boring logs are included as **Appendix B** and the complete laboratory report is included in **Appendix C.**

As shown in **Appendix B**, soil headspace screening in the field did not detect organic vapors. TPH (GRO) and TPH (DRO) were not detected in any of the soil samples collected for laboratory analysis.

3.3 SUMMARY

The following summarizes the findings of NCDOT Parcel 3 - MAC Victor Electronics facility, owned by Kindley Prop LLC, located at 1094 Concord Parkway North:

- According to NCDENR's UST Section, in 1987, one (1) UST was removed and one (1) UST was filled with sand. No files pertaining to the UST removal were located, the location of the UST tank beds was not observed, and no NCDENR Incidents have been identified associated with this facility.
- The geophysical survey did not indicate the presence of USTs or associated features;
- Field screening did not detect the presence of organic vapors above background concentrations; and
- Soil sample analysis did not detect the presence of petroleum hydrocarbons.

SECTION FOUR Limitations

Opinions relating to environmental, geologic, and geotechnical conditions at this parcel are based on limited data, and actual conditions may vary from those encountered at the times and locations where the data was obtained, despite the use of due professional care. The geophysical investigation was conducted in accordance with reasonable and accepted engineering geophysics practices, and the interpretations and conclusions are rendered in a manner consistent with other consultants in our profession. All geophysical techniques have some level of uncertainty and limitations. No other representations of the reported information is expressed or implied, and no warranty or guarantee is included or intended. The results of the geophysical survey are presented in accordance with the NCDOT guidelines, dated May 19, 2009, for identifying and ranking potential USTs on NCDOT projects.

URS Corporation, *Technical and Cost Proposal, Preliminary Site Assessment, Rev*, December 21, 2012.

United States Environmental Protection Agency, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, 1999

North Carolina Department of Transportation, *Request for Technical and Cost Proposal, Preliminary Site Assessment, B-5136(42295.1.1),* November 30, 2012.

North Carolina Department of Transportation, *Notice to Proceed - Preliminary Site Assessment, B-5136(42295.1.1),* January 14, 2013.

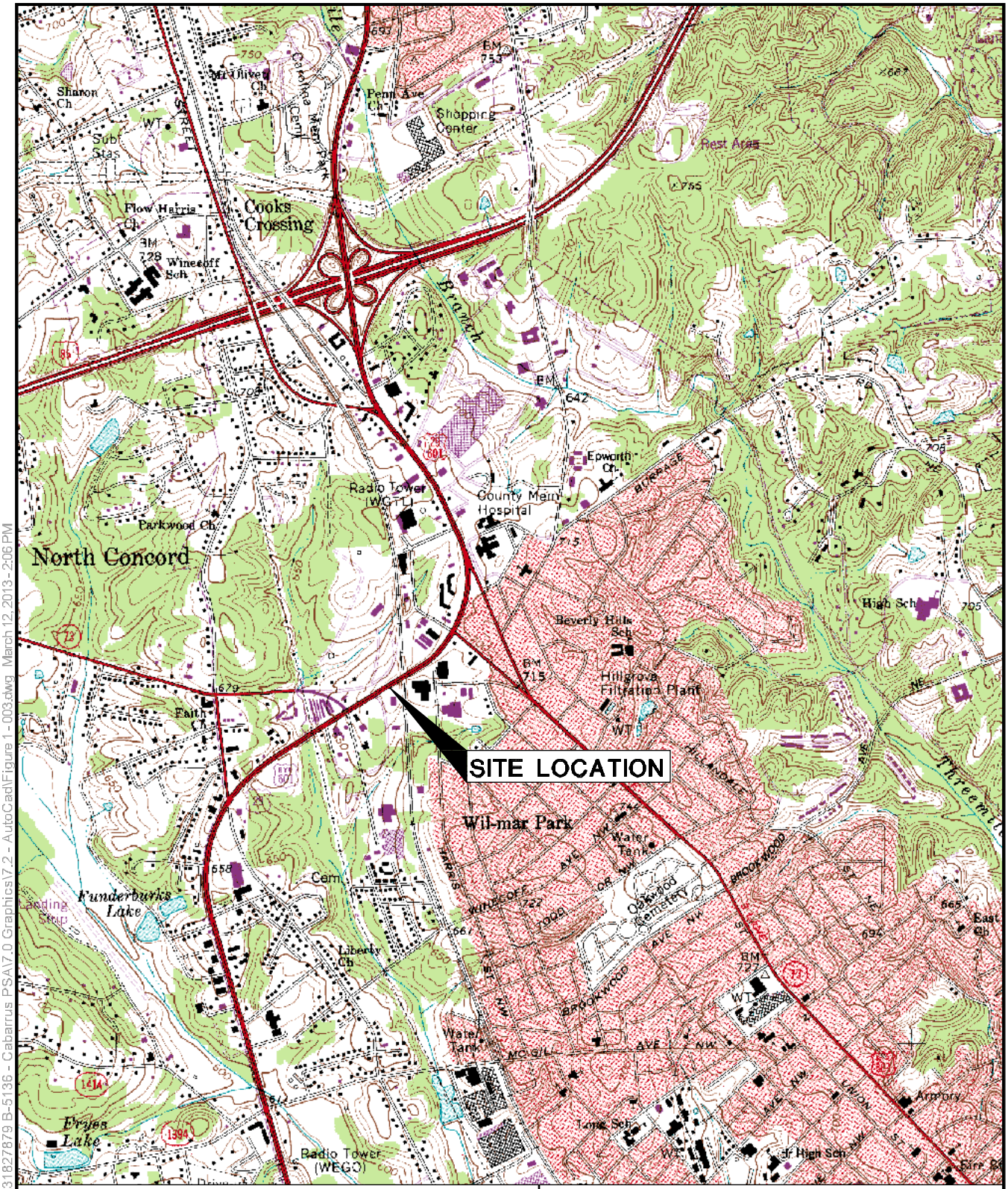
Tables

Table 1
Parcel 003 - Kindley Prop LLC Property
Summary of Analytical Results - Solid Samples
TIP#B-5136 42295.1.1

Analytical Method			EPA 8015 Modified by EPA 3546	EPA 8015 Modified by EPA 5035A/5030B
Sample ID	**Constituent of Concern**		TPH - Diesel Range Organics (DRO)	TPH - Gasoline Range Organics (GRO)
	Date Collected (mm/dd/yy)	Sample Depth (ft. BGS)	mg/kg	mg/kg
P3-SB1-7	02/04/2013	7	ND	ND
P3-SB2-9	02/04/2013	9	ND	ND
P3-SB3-9	02/04/2013	9	ND	ND
NCDENR UST Section Action Levels			10	10
NCDENR Non-UST Petroleum Action Levels			10	10

NOTES:
ND = Not Detected
TPH = Total Petroleum Hydrocarbon
ft. BGS = feet below ground surface
mg/kg = milligrams per kilogram
Bolded data above the NCDENR Action Levels

Figures



SOURCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE
CONCORD, NC – DATED 1969, PHOTOREVISED 1987

FIGURE 1. LOCATION MAP

PARCEL 003, 1094 CONCORD PKWY N
STATE PROJECT B-5136, CONCORD, NC

Prepared for: NC DOT	URS RDU, NORTH CAROLINA 27560
DRAWN BY: TSH	
DATE: 01/26/13	
PROJECT NO. 31827879	Fig. 1

P:\Jobs4_Projects\NCDOT\31827879 B-5136 - Cabarrus PSA\7.0 Graphics\7.2 - AutoCad\Figure 1 - 003.dwg March 12, 2013 - 2:06 PM

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROJECT REFERENCE NO.	SHEET
B-5136	

GeoEnvironmental

0 40 80
FEET

LEGEND

- SB2 — SOIL BORING LOCATION
- PROPOSED RIGHT-OF-WAY
- E — PROPOSED EASEMENT
- PROPOSED DRAINAGE STRUCTURE
- KNOWN SOIL CONTAMINATION
- EXISTING MONITORING WELL

SBI-10	ID - DEPTH
ND	TPH / DRO
ND	TPH / GRO

SOIL RESULTS ARE IN mg/kg

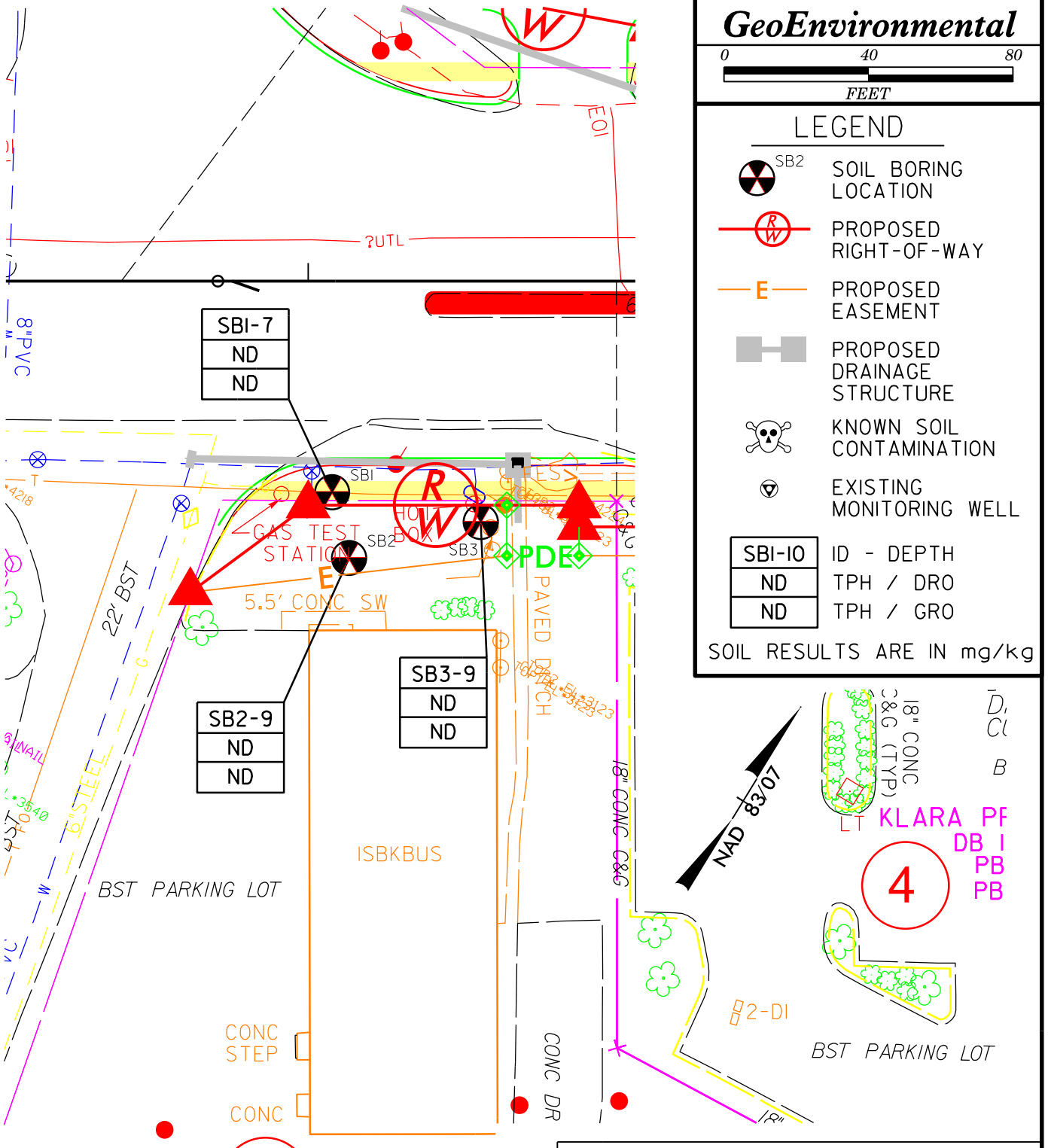


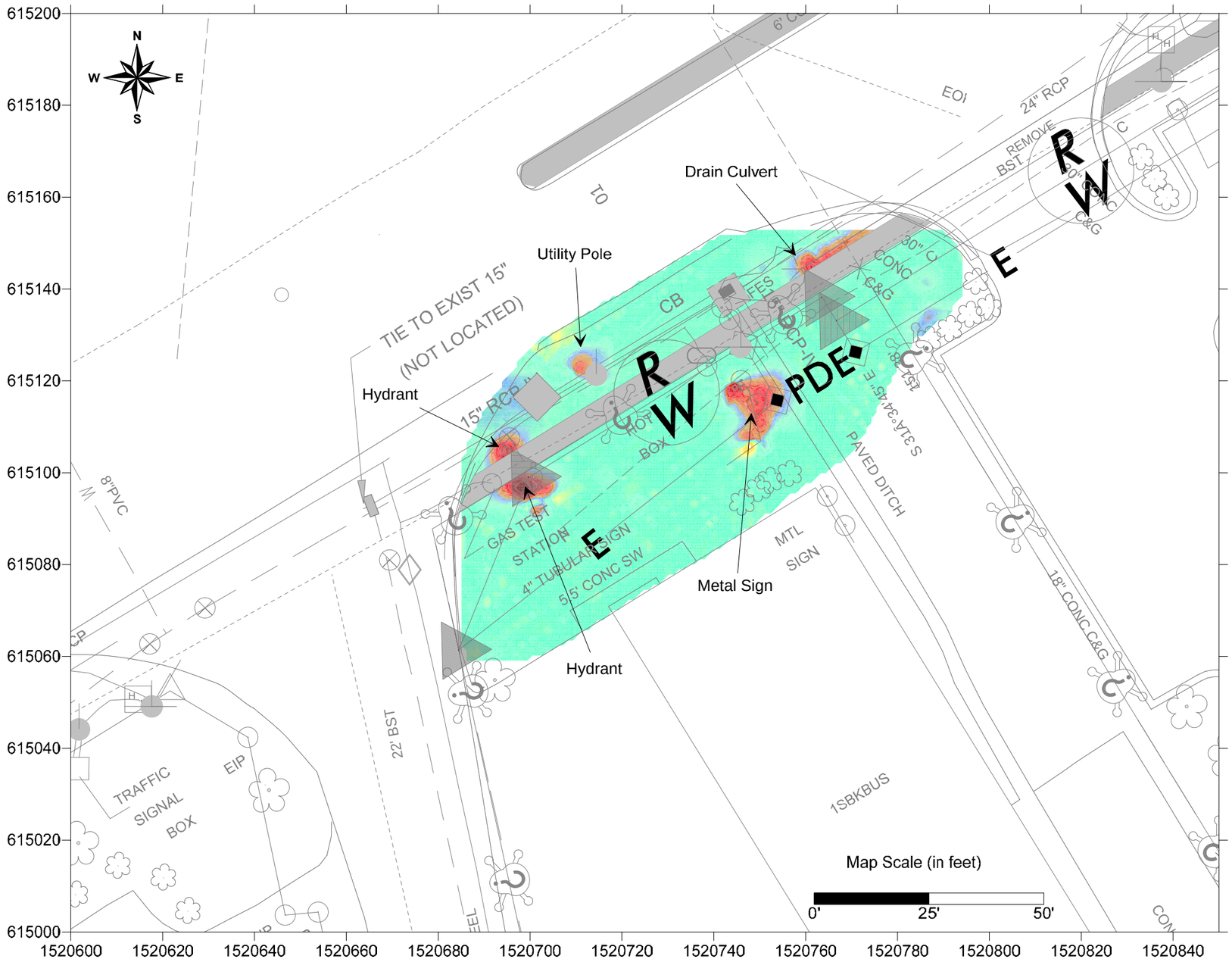
FIGURE 2 SOIL SAMPLING LOCATIONS
PARCEL 003 - KINDLEY PROPERTY
STATE PROJECT B-5136
CABARRUS COUNTY, CONCORD, NC

URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
NC LIC * C-2243
TELEPHONE (919) 461-1100 FAX (919) 461-1415

	DRN BY: LHM	DATE: 3-13-13	STATE PROJECT:
	CHECKED BY: VK	DATE: 3-13-13	B-5136

PARCEL LOCATION MAP

FIGURE 2



EM-61 MKII Channel 1 Response (milliVolts)

Interpreted Increasing Response from Subsurface Metal	10000
	1900
	1760
	1620
	1480
	1340
	1200
	1060
	920
	780
	640
	500
	360
	220
Interpreted Background Response	80
Interpreted Increasing Response from Surface Metal	-60
	-200

Legend

– – – – Interpreted Subsurface Utility Center Line

? Utility Termination Point not Known

Notes:

1. Coordinates in NC State Plane NAD 83 grid.
2. Data from Geonics, Ltd. EM-61 MKII instrument.
3. Base drawing after file "i3819a_ls_prlp_l2650-10400.dgn" provided by NCDOT.
4. Location control from DGPS survey by URS.

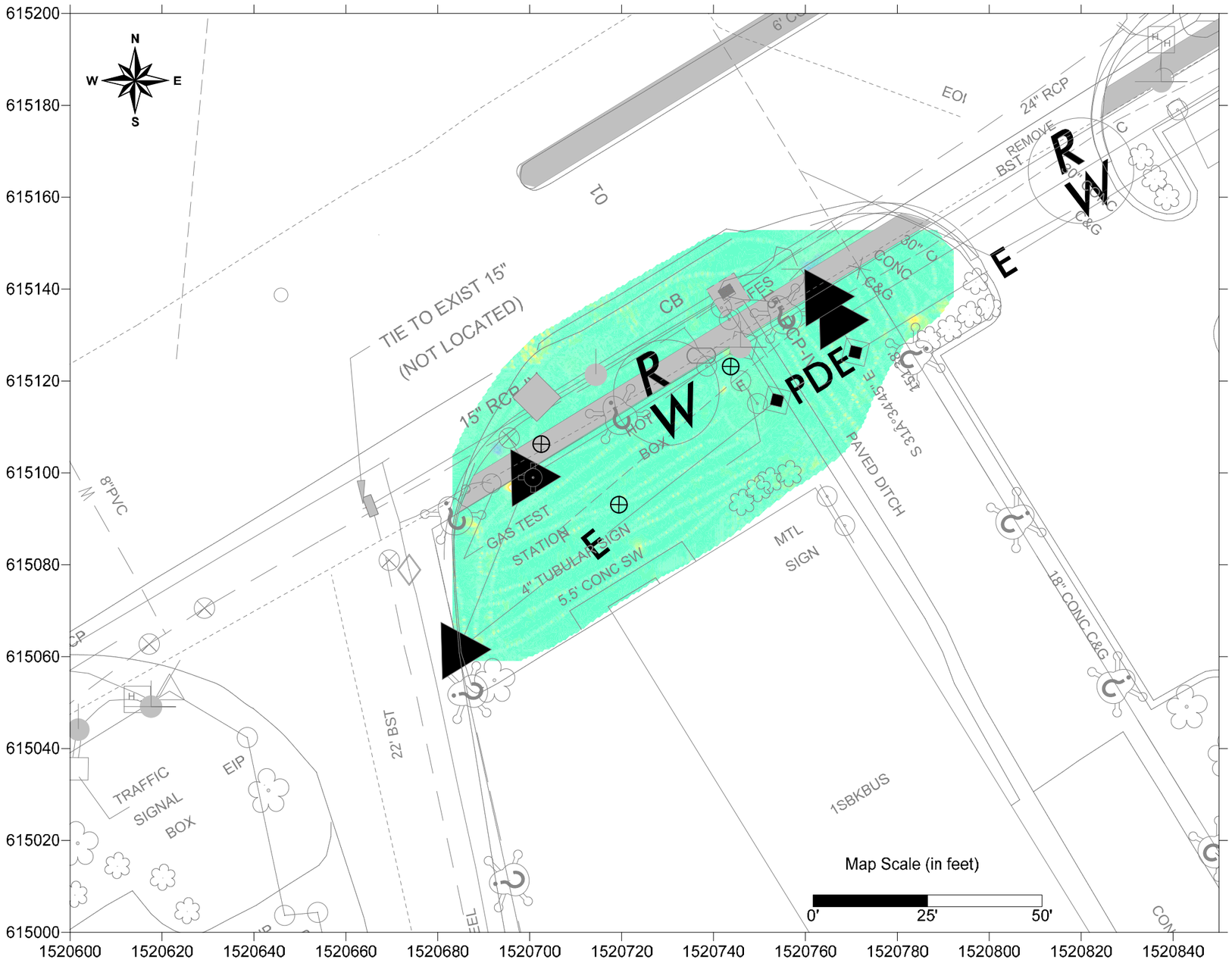
URS Geophysical Services
1600 Perimeter Park Drive, Suite 400
Raleigh, NC 27560
(910)-508-3869

EM-61 MKII Channel 1 Response Contours
KINDLEY PROPERTIES LLC PROPERTY
(Parcel #003)

NCDOT WBS 42295.1.1, Cabarrusl County

Concord, North Carolina

DESIGNED BY		DRAWN BY		CHECKED BY		JOB NUMBER	Figure
MJM	03/08/13	MJM	03/08/13	TJK	03/08/13	31827879	3



EM-61 MKII Differential Response (milliVolts)

Interpreted Increasing Response from Subsurface Metal

10000
1900
1760
1620
1480
1340
1200
1060
920
780
640
500
360
220
80
-60
-200

Interpreted Background Response

Interpreted Increasing Response from Surface Metal

Legend

– – – – Interpreted Subsurface Utility Center Line

? Utility Termination Point not Known

Notes:

1. Coordinates in NC State Plane NAD 83 grid.
2. Data from Geonics, Ltd. EM-61 MKII instrument.
3. Base drawing after file "i3819a_ls_prlp_l2650-10400.dgn" provided by NCDOT.
4. Location control from DGPS survey by URS.

URS Geophysical Services
1600 Perimeter Park Drive, Suite 400
Raleigh, NC 27560
(910)-508-3869

EM-61 MKII Differential Response Contours
KINDLEY PROPERTIES LLC PROPERTY
(Parcel #003)

NCDOT WBS 42295.1.1, Cabarrusl County

Concord, North Carolina

DESIGNED BY		DRAWN BY		CHECKED BY		JOB NUMBER	Figure
MJM	03/06/13	MJM	03/06/13	TJK	03/06/13	31827879	3

Appendix A
Historical Information

Cabarrus County Map

1"=1500'

Legend

BaseMap Service

Railroad

Streets

Counties

Aerial 1938

Value

High : 255

Low : 0

Cabarrus County

Map Printed On {2012-12-14 14:01}

Disclaimer Cabarrus County shall not be held liable for any errors in the data represented on this map. This includes errors of omission, commission, concerning the content of the data, and relative positional accuracy of the data. The data cannot be construed to be a legal document . Primary sources from which this data was compiled must be consulted for verification of information represented on this map document.

Powered by **ROLTA OnPoint**™

Cabarrus County Map

1"=1500'

Legend

BaseMap Service

- Railroad
- Streets
- Structure Footprints
- Counties

Aerial 1950

Value

- High : 255
- Low : 0

- Cabarrus County

Map Printed On {2012-12-14 13:59}

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Cabarrus County Map

1"=1500'

Legend

BaseMap Service

- Railroad
- Streets
- Structure Footprints
- Tax Parcels
- Counties

Aerial 1956

Value

- High : 255
- Low : 0

Cabarrus County

Map Printed On {2012-12-14 13:56}

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Cabarrus County Map

1"=1500'

Legend

BaseMap Service

- Railroad
- Streets
- Tax Parcels
- Counties

Aerial 1964

Value

High : 255

Low : 0

- Cabarrus County

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Cabarrus County Map

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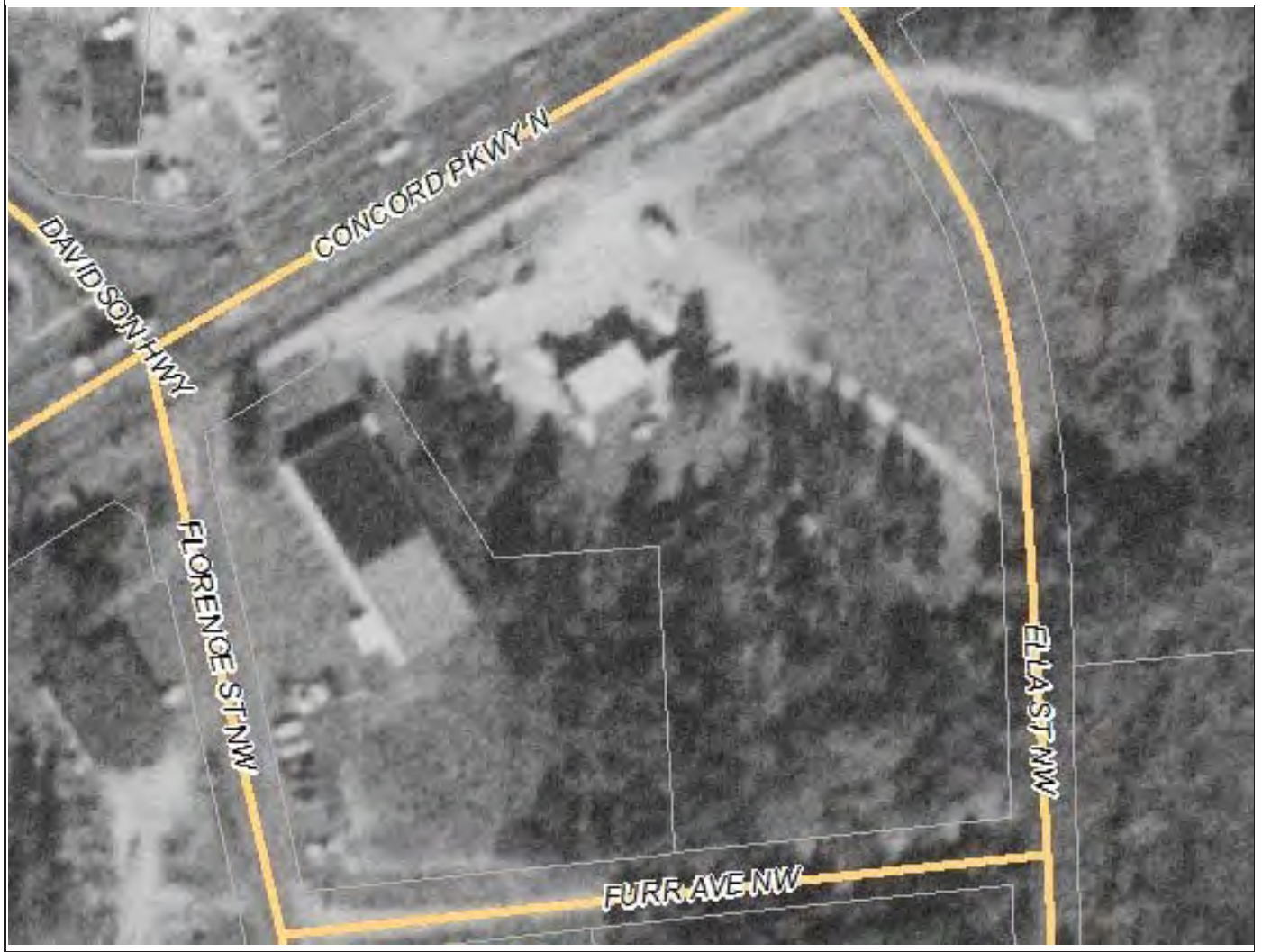

Legend

BaseMap Service

- Railroad
- Streets
- Tax Parcels
- Counties

Aerial 1975

Value

- High : 255
- Low : 0

- Cabarrus County

Map Printed On {2012-12-14 13:51}

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Cabarrus County Map

1"=1500'

Legend

BaseMap Service

- Railroad
- Streets
- Tax Parcels
- Counties

Aerial 1986

Value

High : 255

Low : 0

Cabarrus County

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Cabarrus County Map

1"=1500'

Legend

BaseMap Service

- Railroad
- Streets
- Tax Parcels
- Counties

Aerial 2001

Value

- High : 255
- Low : 0

Cabarrus County

Map Printed On {2012-12-14 13:38}

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Cabarrus County Map

1"=1500'

Legend

BaseMap Service

- Railroad
- Streets
- Tax Parcels
- Counties

Aerial 2005

RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3
- Cabarrus County

Map Printed On {2012-12-14 13:37}

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Cabarrus County Map

1"=1500'

Legend

BaseMap Service

- Railroad
- Streets
- Tax Parcels
- Counties

Aerial 2007

RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3
- Cabarrus County

Map Printed On {2012-12-14 13:35}

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Cabarrus County Map

Legend

BaseMap Service

- Railroad
- Streets
- Tax Parcels
- Counties

Aerial 2009

RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3
- Cabarrus County

Map Printed On {2012-12-14 11:07}

Comments 1"-1500'

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Cabarrus County Map

Legend

BaseMap Service

- Railroad
- Streets
- Tax Parcels
- Counties
- Cabarrus County

Map Printed On {2012-12-14 11:04}

Comments 1"-1500'

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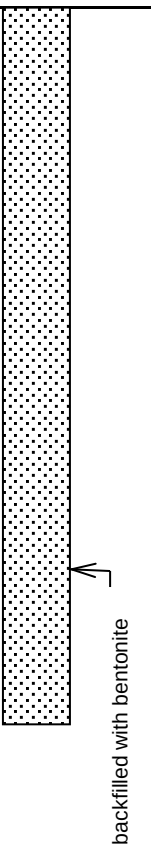
Appendix B
Boring Logs

BORING LOG: P3-SB1

Permit #	Drill Date ***02/04/13***		Site ***Parcel 003***
Client ***NCDOT***	Use		URS Corporation
Address ***1094 Concord Pkwy N, Concord, NC***			Total Depth (ft) ***7***
Drilling Method ***Geoprobe direct push***	Boring Depth (ft) ***7***		Boring Diam. (in) ***2.25***
Backfill Material ***Bentonite chips***			Static Water Level ***NA***
Rmrks ***Groundwater not encountered in boring***	TOC Elevation		Sample Method ***Acetate liner***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0					Grass and topsoil
				0.0 ppm	Brown sandy silty clay, slightly moist
2					Brown-orange, fine- to medium-grained sandy clay, slightly moist
				0.0 ppm	
4					Orange fine- to medium-grained sandy clay, dry
				0.0 ppm	Orangish-beige fine- to medium-grained clayey sand with increasing sand, dry
6				0.0 ppm	Beige, sand, dry
	P3-SB1-7	7'			
8					Boring Terminated at 7 ft bgs.
10					
12					

Typical Diagram



Not to Scale

Notes:

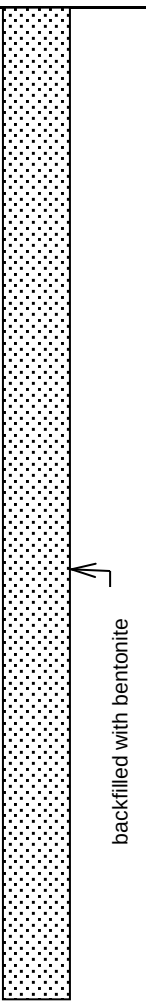
Geologist: ***Brandy Costner*** Driller: ***Probe Tech***

BORING LOG: P3-SB2

Permit #		Drill Date	***02/04/13***	Site	***Parcel 003***
Client	***NCDOT***	Use		URS Corporation	
Address	***1094 Concord Pkwy N, Concord, NC***			Total Depth (ft)	***10***
Drilling Method	***Geoprobe direct push***	Boring Depth (ft)	***10***	Boring Diam. (in)	***2.25***
Backfill Material	***Bentonite chips***			Static Water Level	***NA***
Rmrks	***Groundwater not encountered in boring***	TOC Elevation		Sample Method	***Acetate liner***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0					Grass and topsoil
				0.0 ppm	Brown sandy silty clay
2					Red, slightly moist, stiff clay
				0.0 ppm	Red, slightly moist stiff clay to silty clay
4					
				0.0 ppm	Same as above with some fine sand
6					Red-orange, fine sandy silt, slightly moist
				0.0 ppm	
8				0.4 ppm	Same as above to orange-brown
	P3-SB2-9	9'		0.9 ppm	
10					Boring Terminated at 10 ft bgs.
12					

Typical Diagram



Not to Scale

Notes:

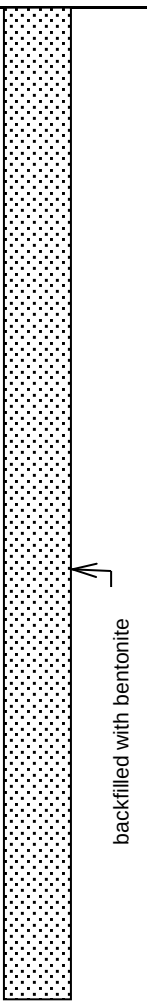
Geologist: ***Brandy Costner*** Driller: ***Probe Tech***

BORING LOG: P3-SB3

Permit #		Drill Date	***02/04/13***	Site	***Parcel 003***
Client	***NCDOT***	Use		URS Corporation	
Address	***1094 Concord Pkwy N, Concord, NC***			Total Depth (ft)	***10***
Drilling Method	***Geoprobe direct push***	Boring Depth (ft)	***10***	Boring Diam. (in)	***2.25***
Backfill Material	***Bentonite chips***			Static Water Level	***NA***
Rmrks	***Groundwater not encountered in boring***	TOC Elevation		Sample Method	***Acetate liner***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0					Grass and topsoil
2				0.0 ppm	Brown-red clay, slightly moist
				0.0 ppm	
4					Red, fine- to medium-grained sandy clay, slightly moist
				0.0 ppm	Orangish-beige fine- to medium-grained clayey sand with increasing sand, dry
6				0.0 ppm	
8					Red-orange, fine- to medium-grained clayey sand
	Ps-SB-3-9	9'		0.0 ppm	Orange-brown, clayey fime- to medium-grained sand
10					Boring Terminated at 10 ft bgs
12					

Typical Diagram



Not to Scale

Notes:

Geologist: ***Brandy Costner*** Driller: ***Probe Tech***

Appendix C
Laboratory Report

Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
Eden, NC 27288
(336)623-8921

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

February 11, 2013

Chemical Testing Engineer
NCDOT
Materials & Tests Unit
1801 Blue Ridge Road
Raleigh, NC 27607

RE: Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Dear Chemical Engineer:
Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jon D Bradley for
Kevin Herring
kevin.herring@pacelabs.com
Project Manager

Enclosures

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92146791001	**P3-SB1-7**	Solid	02/04/13 10:50	02/04/13 16:45
92146791002	**P3-SB2-9**	Solid	02/04/13 10:45	02/04/13 16:45
92146791003	**P3-SB3-9**	Solid	02/04/13 10:55	02/04/13 16:45

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92146791001	**P3-SB1-7**	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146791002	**P3-SB2-9**	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146791003	**P3-SB3-9**	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C

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HITS ONLY

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92146791001	**P3-SB1-7**					
ASTM D2974-87	Percent Moisture	8.5	%	0.10	02/06/13 07:56	
92146791002	**P3-SB2-9**					
ASTM D2974-87	Percent Moisture	14.4	%	0.10	02/06/13 07:56	
92146791003	**P3-SB3-9**					
ASTM D2974-87	Percent Moisture	8.6	%	0.10	02/06/13 07:56	

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(704)875-9092

PROJECT NARRATIVE

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Method: **EPA 8015 Modified**
Description: 8015 GCS THC-Diesel
Client: NCDOT West Central
Date: February 11, 2013

General Information:
3 samples were analyzed for EPA 8015 Modified. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

PROJECT NARRATIVE

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Method: **EPA 8015 Modified**
Description: Gasoline Range Organics
Client: NCDOT West Central
Date: February 11, 2013

General Information:
3 samples were analyzed for EPA 8015 Modified. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Sample: P3-SB1-7 **Lab ID: 92146791001** Collected: 02/04/13 10:50 Received: 02/04/13 16:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	5.5	4.9	1	02/05/13 09:00	02/08/13 01:27	68334-30-5	
Surrogates									
n-Pentacosane (S)	50	%	41-119		1	02/05/13 09:00	02/08/13 01:27	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.4	6.4	1	02/07/13 16:18	02/08/13 02:21	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	92	%	70-167		1	02/07/13 16:18	02/08/13 02:21	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**8.5**	%	0.10	0.10	1		02/06/13 07:56		

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ANALYTICAL RESULTS

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Sample: P3-SB2-9 **Lab ID: 92146791002** Collected: 02/04/13 10:45 Received: 02/04/13 16:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	5.8	5.3	1	02/08/13 14:06	02/11/13 12:56	68334-30-5	
Surrogates									
n-Pentacosane (S)	46	%	41-119		1	02/08/13 14:06	02/11/13 12:56	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	7.8	7.8	1	02/07/13 16:18	02/08/13 02:43	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	89	%	70-167		1	02/07/13 16:18	02/08/13 02:43	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.4**	%	0.10	0.10	1		02/06/13 07:56		

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Sample: P3-SB3-9 **Lab ID: 92146791003** Collected: 02/04/13 10:55 Received: 02/04/13 16:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	5.5	4.9	1	02/05/13 09:00	02/08/13 02:13	68334-30-5	
Surrogates									
n-Pentacosane (S)	48	%	41-119		1	02/05/13 09:00	02/08/13 02:13	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.1	6.1	1	02/07/13 16:18	02/08/13 03:06	8006-61-9	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-167		1	02/07/13 16:18	02/08/13 03:06	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**8.6**	%	0.10	0.10	1		02/06/13 07:56		

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

QC Batch: GCV/6620 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92146791001, 92146791002, 92146791003

METHOD BLANK: 918269 Matrix: Solid
Associated Lab Samples: 92146791001, 92146791002, 92146791003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	5.9	02/08/13 00:49	
4-Bromofluorobenzene (S)	%	94	70-167	02/08/13 00:49	

LABORATORY CONTROL SAMPLE: 918270

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	24.6	25.3	103	70-165	
4-Bromofluorobenzene (S)	%			98	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 918271 918272

Parameter	Units	92146732001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	23.8	23.8	20.5	24.4	83	100	47-187	17	30	
4-Bromofluorobenzene (S)	%						90	94	70-167			

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

QC Batch: OEXT/20669
QC Batch Method: EPA 3546
Analysis Method: EPA 8015 Modified
Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92146791001, 92146791003

METHOD BLANK: 916002 Matrix: Solid
Associated Lab Samples: 92146791001, 92146791003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	02/07/13 23:53	
n-Pentacosane (S)	%	64	41-119	02/07/13 23:53	

LABORATORY CONTROL SAMPLE: 916003

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	44.0	66	49-113	
n-Pentacosane (S)	%			68	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 916004 916005

Parameter	Units	92146791001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Components	mg/kg	ND	72.9	72.9	41.4	32.2	55	43	10-146	25	30	
n-Pentacosane (S)	%						59	47	41-119			

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9800 Kincey Ave. Suite 100
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QUALITY CONTROL DATA

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

QC Batch: OEXT/20722
QC Batch Method: EPA 3546
Analysis Method: EPA 8015 Modified
Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92146791002

METHOD BLANK: 918873 Matrix: Solid
Associated Lab Samples: 92146791002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	02/10/13 12:57	
n-Pentacosane (S)	%	69	41-119	02/10/13 12:57	

LABORATORY CONTROL SAMPLE: 918874

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	45.1	68	49-113	
n-Pentacosane (S)	%			75	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 918875 918876

Parameter	Units	92147350004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Components	mg/kg	22.0	89.4	89.4	67.9	53.1	51	35	10-146	25	30	
n-Pentacosane (S)	%						68	52	41-119			

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(704)875-9092

QUALITY CONTROL DATA

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

QC Batch: PMST/5290
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92146791001, 92146791002, 92146791003

SAMPLE DUPLICATE: 916221

Parameter	Units	92146793001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.9	14.9	0	25	

SAMPLE DUPLICATE: 916222

Parameter	Units	92146809005 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.2	14.6	4	25	

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QUALIFIERS

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TIP#B-5136 42295.1.1
Pace Project No.: 92146791

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92146791001	**P3-SB1-7**	EPA 3546	OEXT/20669	EPA 8015 Modified	GCSV/13888
92146791002	**P3-SB2-9**	EPA 3546	OEXT/20722	EPA 8015 Modified	GCSV/13923
92146791003	**P3-SB3-9**	EPA 3546	OEXT/20669	EPA 8015 Modified	GCSV/13888
92146791001	**P3-SB1-7**	EPA 5035A/5030B	GCV/6620	EPA 8015 Modified	GCV/6621
92146791002	**P3-SB2-9**	EPA 5035A/5030B	GCV/6620	EPA 8015 Modified	GCV/6621
92146791003	**P3-SB3-9**	EPA 5035A/5030B	GCV/6620	EPA 8015 Modified	GCV/6621
92146791001	**P3-SB1-7**	ASTM D2974-87	PMST/5290		
92146791002	**P3-SB2-9**	ASTM D2974-87	PMST/5290		
92146791003	**P3-SB3-9**	ASTM D2974-87	PMST/5290		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: | of |

1682222

Section A Required Client Information:

Company: URS Corp
Address: 10000 Fairview Rd
Charlotte, NC 28210
Email To: walt.plekan@urs.com
Phone: 704-716-6751 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Walt Plekan
Copy To: vernon.keys@urs.com
Purchase Order No.:
Project Name: TIP #B-5136 WBS# 42295.1.1
Project Number: 38027879

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 5697-1

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER _____

Site Location STATE: NC

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: TPH 6220	TPH DRO	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	P3-SB1-7	SL	G			2/4/13	1050		4	2						2		X	X		001
2	P3-SB2-9	↓	↓			↓	1045		4	2						2		X	X		002
3	P3-SB3-9	↓	↓			↓	1055		4	2						2		X	X		003
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

92146791

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Brandy Costner / URS	2/4/13	1550	Brandy Pace	2/4/13	15:45				
	Brandy-Pace	2/4/13	16:45	Jmoore/Pace	2.4.13	1645	05	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brandy Costner

SIGNATURE of SAMPLER: Brandy Costner

DATE Signed (MM/DD/YY): 2/4/13

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: October 31, 2012 Page 1 of 2
	Document Number: **F-CHR-CS-03-rev.08**	Issuing Authority: Pace Huntersville Quality Office

Client Name: WRS Project # 92146791

Where Received: ☑ Huntersville ☐ Asheville ☐ Eden ☐ Raleigh

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1101 T1102 **Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

Temp Correction Factor T1101: No Correction T1102: No Correction

Corrected Cooler Temp.: 3.5 C **Biological Tissue is Frozen:** Yes No N/A

Date and Initials of person examining contents: 2/4

Temp should be above freezing to 6°C **Comments:**

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No ☑	Initial when completed
Samples checked for dechlorination:	☐Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted:_____ Date/Time:_____

Comments/ Resolution:_____

SCURF Review: KM Date: 2/4/13 **SRF Review:** KM Date: 2/5/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)